

REMARKS

Claims 29-43 are pending in the present application and have been rejected. Applicants have amended all claims to more particularly point out and distinctly claim the invention. No new matter is added by this amendment. Reexamination and reconsideration are requested.

Objection To Specification

The specification was objected to on ground that "a fresh air concentration value" in claim 1 does not have antecedent basis in the specification. Applicants assume that "claim 1" referred to in the Office Action is claim 29 since claims 1-28 were previously cancelled. Applicants have amended claims 29 and 30 to replace "fresh" with "new" to more particularly point out and distinctly claim the invention. Support in the specification for a "new air concentration value" is found at page 12, lines 23-28. Applicant asserts that with this amendment, the objection to the specification has been overcome.

"Means For" Language

The Office has indicated at page 2 of the referenced Office Action that the means for receiving and triggering is not considered to be a means-plus-function recitation since structure defining the means follows in the claim, and that it is assumed that applicant has not invoked 35 U.S.C. § 112, sixth paragraph. To more particularly point out and distinctly claim the invention, Applicant has amended claims 29 and 30 by deleting the means for receiving and triggering. Applicant has likewise amended other claims and has attempted to make other amendments to the claims to more clearly indicate a "means for" element or elements. For example, Applicant has amended claims 31-42 by deleting "including a memory" while keeping the means for deriving and storing.

Rejection Under 35 U.S.C. §102

Claims 29-43 were rejected under 35 U.S.C. §102(b) as being anticipated by Koenig (5,176,631). The examiner asserts that Koenig discloses a sensor, a memory, a processor, a display, and an alarm, and that the processor is considered capable of functioning as claimed. This rejection is respectfully traversed. Applicant submits that Koenig fails to teach or suggest the claimed invention in that Koenig provides no teaching toward a processor adapted to use

weighting factors that decrease the weight of the detected air according to age. The older age detected air is assigned a lower weight.

Claims 29 and 30 recite that the processor is adapted to assign "a weighting factor less than one" to an "air concentration value previously stored in the memory." However, Koenig assigns only integer values (see Koenig col. 46, lines 36-45) to each window of detected air. Koenig therefore fails to teach a processor capable of functioning as Applicant is claiming, and Applicant therefore submits that independent claims 29-30 as amended should be allowable over Koenig.

In respect of independent claims 31-42, Applicants submit that Koenig also fails to teach or suggest the claimed invention in that Koenig provides no teaching toward a processor adapted to use a varying weighting factor based on age of a signal as recited in the claims. In particular, Koenig provides no teaching of a weighting factor that is "smaller the longer the time which has elapsed since the corresponding sensor output signal was produced" (claims 31-33 and 37-39) or "smaller the larger the amount of fluid which has flowed through said conduit since the corresponding sensor output signal was produced" (claims 34-36 and 40-42). Accordingly, independent claims 31-42 are allowable over Koenig.

As described at page 5, lines 20-24 of the specification, "age" may be defined as the volume of fluid that has passed since a particular signal value was received and/or generated, and may also be determined as the actual time that has elapsed since receipt and/or generation of the signal value. Applicants are looking at the age of signals to determine if the detected air could be safely absorbed by a patient or could be a problem. Koenig, on the other hand, accumulates the amount of continuously sensed air before a value is assigned solely for the purpose of determining how big an air bubble is (see Koenig col. 46, lines 48-57). Further, in Koenig, readings representing the volume of air in each window are weighted based only on the volume of air in that window, and are not weighted based on how recent or how old the readings are. Applicant draws the attention of the Office to page 3, lines 4-12 of the specification where it is described that small air bubbles may be safely absorbed by the patient, and to page 3, lines 27-27 where a Koenig-type system is described and is pointed out that such a system "may not, however, adequately reflect the actual ability of the patient's system to safely absorb air." This

problem with a Koenig-type system is why Applicant's definition of age includes "the volume of fluid that has passed" (claims 34-36 and 40-42) and not the volume of air that has passed as in Koenig. Under this definition, Applicant's weighting factors decrease with volume of fluid that has passed and do not increase with the volume of air that has passed as in Koenig. For all of these reasons the pending claims are allowable.

In addition to Koenig in its entirety, Applicant points the attention of the Office specifically to col. 45, line 1 through col. 47, line 49 of Koenig for a more detailed description of its air "weighting" system.

Conclusion

In view of the foregoing, Applicant respectfully submits that all pending claims are now in condition for allowance. Reexamination and reconsideration of the application are respectfully requested.

In addition to the fees enclosed with this paper, the Commissioner is authorized to charge deposit account no. 06-2425 for any additional required fees or to credit any excess fees paid that arise from the filing of this paper.

Respectfully submitted,

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